### § 39.20–9 Tank barge liquid overfill protection—B/ALL.

Each cargo tank of a tank barge must have one of the following liquid overfill protection arrangements.

(a) A system meeting the requirements of § 39.20–7 of this part which:

(1) Includes a self-contained power supply;

(2) Is powered by generators installed on the barge; or

(3) Receives power from a facility and is fitted with a shore tie cable and a 120 volt 20 amp explosion-proof plug which meets:

(i) ANSI/NEMA WD6;

(ii) NFPA 70, Articles 410–57 and 501–12; and

(iii) § 111.105–9 of this chapter.

(b) An intrinsically safe overfill control system which:

(1) Is independent of the cargo gauging device required by § 39.20–3(a) of this part;

(2) Actuates an alarm and automatic shutdown system at the facility overfill control panel, or on the vessel to be lightered if a lightering operation, 60 seconds before the tank becomes 100 percent liquid full;

(3) Is able to be checked at the tank for proper operation prior to each loading;

(4) Consists of components which, individually or in series, will not generate or store a total of more than 1.2 V, 0.1 A, 25 mW, or 20 microjoules;

(5) Has at least one tank overfill sensor switch with normally closed contacts per cargo tank;

(6) Has all tank overfill sensor switches connected in series;

(7) Has interconnecting cabling that meets § 111.105–15(b) of this chapter; and

(8) Has a male plug with a 5 wire, 16 amp connector body meeting IEC 309–1/309–2 which is:

(i) Configured with pins S2 and R1 for the tank overfill sensor circuit, pin G connected to the cabling shield, and pins N and T3 reserved for an optional high level alarm circuit meeting the requirements of this paragraph; and

(ii) Labeled ''Connector for Barge Overflow Control System'' and with the total inductance and capacitance of the connected switches and cabling.

(c) A spill valve which:

(1) Meets ASTM F 1271 (incorporated by reference, see § 39.10–5);

(2) Relieves at a pressure higher than the pressure at which the pressure relief valves meeting the requirements of § 39.20–11 operate;

(3) Limits the maximum pressure at the cargo tank top during liquid overfill, at the maximum loading rate for the tank, to not more than the maximum design working pressure for the tank; and

(4) If the vessel is in ocean or coastwise service, has provisions to prevent opening due to cargo sloshing.

(d) A rupture disk arrangement which meets paragraphs (c)(2), (c)(3) and (c)(4) of this section and is approved by the Commandant (G-MSO).

[CGD 88–102, 55 FR 25446, June 21, 1990, as amended by CGD 95–072, 60 FR 50462, Sept. 29, 1995; CGD 96–041, 61 FR 50727, Sept. 27, 1996; USCG–2000–7790, 65 FR 58459, Sept. 29, 2000]

### § 39.20–11 Vapor overpressure and vacuum protection—TB/ALL.

(a) The cargo tank venting system required by § 32.55 of this chapter must:

(1) Be capable of discharging cargo vapor at 1.25 times the maximum transfer rate such that the pressure in the vapor space of each tank connected to the vapor collection system does not exceed:

(i) The maximum design working pressure for the tank, or

(ii) If a spill valve or rupture disk is fitted, the pressure at which the device operates;

(2) Not relieve at a pressure corresponding to a pressure in the cargo tank vapor space of less than 1.0 psig;

(3) Prevent a vacuum in the cargo tank vapor space, whether generated by withdrawal of cargo or vapor at maximum rates, that exceeds the maximum design vacuum for any tank connected to the vapor collection system; and

(4) Not relieve at a vacuum corresponding to a vacuum in the cargo tank vapor space of less than 0.5 psi below atmospheric pressure.

(b) Each pressure-vacuum relief valve must:

(1) Be tested for venting capacity in accordance with paragraph 1.5.1.3 of API 2000; and